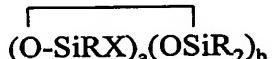
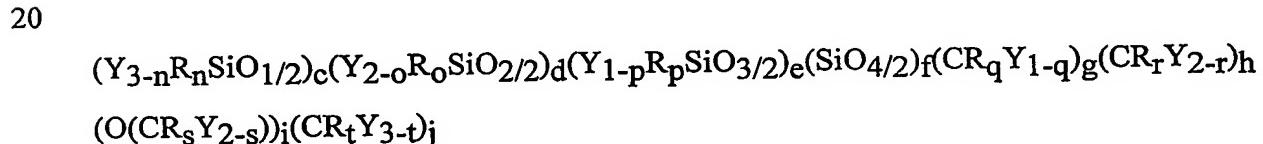


CLAIMS

1. A method comprising (1) heating in the presence of a catalyst, a mixture comprising
5 (i) at least one organohydrogensilicon compound containing at least one silicon-
bonded hydrogen atom per molecule or a reaction product obtained by mixing in the presence
of a platinum group metal-containing catalyst at least one organohydrogensilicon compound
containing at least one silicon-bonded hydrogen atom per molecule and at least one
compound having at least one aliphatic unsaturation where in each case the
10 organohydrogensilicon compound is described by formula (I)

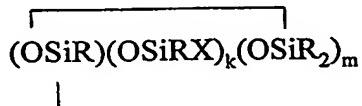


where each R is independently selected from a hydrogen atom and a monovalent hydrocarbon
group comprising 1 to 20 carbon atoms which is free from aliphatic unsaturation, a is an
integer from 1 to 18, b is an integer from 1 to 19, a + b is an integer from 3 to 20, each X is
15 an independently selected functional group selected from a halogen atom, an ether group, an
alkoxy group, an alkoxyether group, an acyl group, or a silyl group, or a $-Z\text{-R}^4$ group, where
each Z is independently selected from an oxygen and a divalent hydrocarbon group
comprising 2 to 20 carbon atoms, each R^4 group is independently selected from $-\text{BR}_u\text{Y}_{2-u}$, -
20 $\text{SiR}_v\text{Y}_{3-v}$, or a group described by formula (II):



where B refers to boron, each R is as described above, the sum of c+d+e+f+g+h+i+j is at
25 least 2, n is an integer from 0 to 3, o is an integer from 0 to 2, p is an integer from 0 to 1, q is
an integer from 0 to 1, r is an integer from 0 to 2, s is an integer from 0 to 2, t is an integer
from 0 to 3, u is an integer from 0 to 2, v is an integer from 0 to 3, each Y is an independently
selected functional group selected from a halogen atom, an ether group, an alkoxy group, an

alkoxyether group, an acyl group, or a silyl group, or a Z-G group, where Z is as described above, each G is a cyclosiloxane described by formula (III):



where R and X are as described above, k is an integer from 0 to 18, m is an integer from 0 to 18, k+m is an integer from 2 to 20, provided in formula (II) that one of the Y groups is replaced by the Z group bonding the R⁴ group to the cyclosiloxane of formula (I), and provided further at least one X group of Formula (I) is a -Z-R⁴ group;

- (ii) at least one endblocker described by formula (IV) R'3SiO(MeR'SiO)_ZSiR'3, where z ranges from 0 to 150 and each R' is independently chosen from hydrogen, alkyl, aryl, alkenyl, dienyl or functional alkyls where the functionality may be fluoro, fluoroether, polyether, ether, aryl, silyl, siloxy, carboxy, glycosidyl or acrylate, and optionally
 - (iii) at least one organosiloxane chosen from a hydrolyzate described by formula (V) HO(MeR'SiO)_{y'}H and a cyclosiloxane described by formula (VI) (MeR'SiO)_y where y is an integer from 3 to 30, y' is an integer from 1 to 500, and each R' is as described above; provided if component (i) is a reaction product and it does not contain any silicon-bonded hydrogen bonds then at least one R' of either component (ii) or (iii) is hydrogen, so to cause polymerization of components (i), (ii), and optionally (iii) to form silicon-bonded hydrogen containing branched polymers.

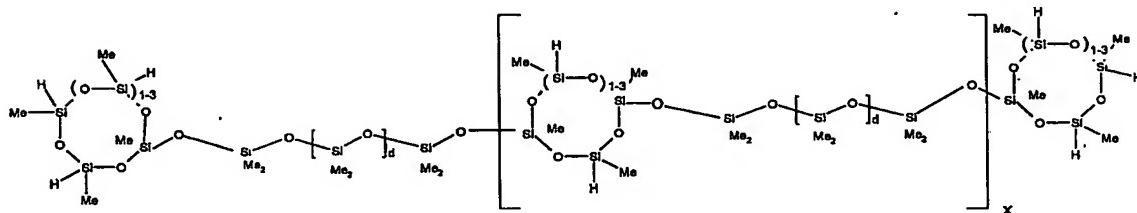
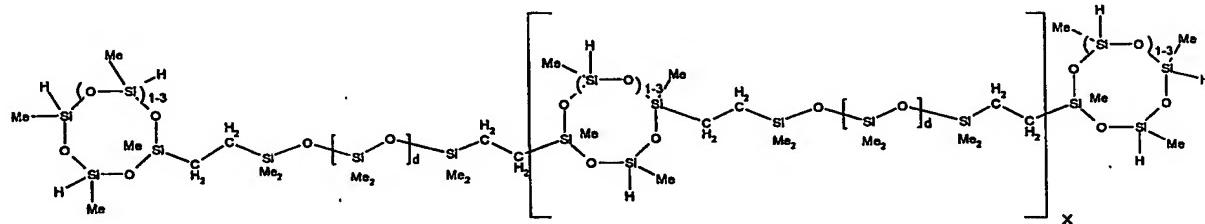
- 2. The method of claim 1 where subscript b is an integer from 2 to 19, subscript c is an integer from 0 to 50, subscript d is an integer from 0 to 5000, subscript e is an integer from 0 to 48, subscript f is an integer from 0 to 24, subscript g is an integer from 0 to 50, subscript h is an integer from 0 to 50, subscript i is an integer from 0 to 50, and subscript j is an integer from 0 to 50.

- 3. The method of claim 1 or 2 where each R group is independently selected from hydrogen atoms, alkyl groups comprising 1 to 8 carbon atoms, or aryl groups comprising 6 to 9 carbon atoms, each X is a Z-R⁴ group or is independently selected from chloro, methoxy, isopropoxy, where Z is a divalent hydrocarbon group, and R⁴ is selected from -CH₂CH₂-,

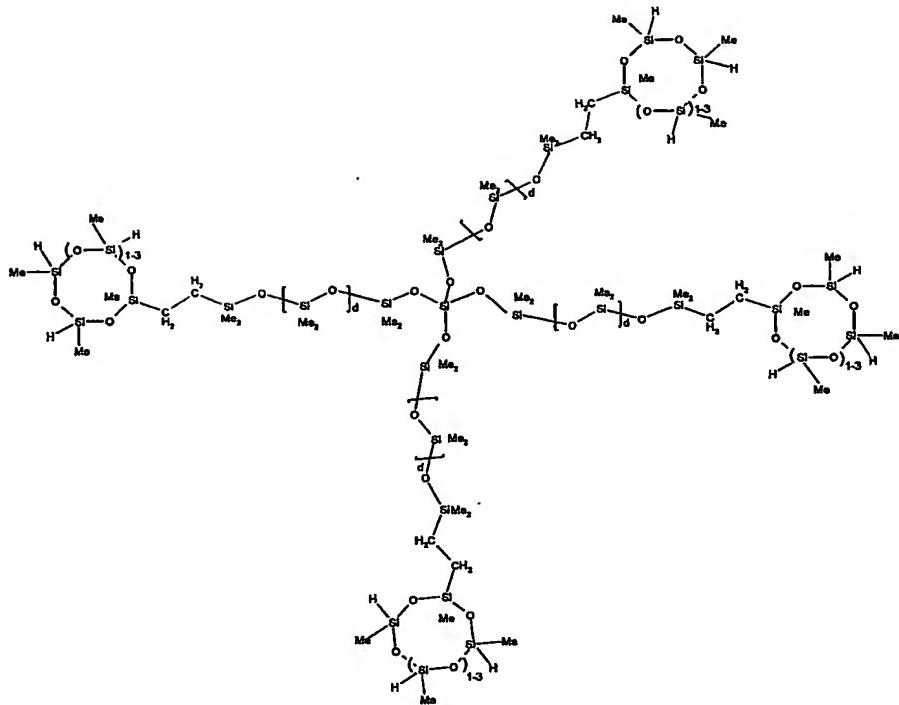
$-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{O}(\text{CH}_2\text{CH}_2\text{O})_{z'}-$, where $z' = 1-100$, $\text{O}(\text{CH}_2\text{CH}_2\text{CH}_2\text{O})_{z''}-$, where $z'' = 1-100$ and siloxane groups described by $-\text{R}_2\text{SiO}(\text{R}_2\text{SiO})_d\text{SiR}_2\text{-Z-G}$, $-\text{R}_2\text{SiOSiR}_3$, $-\text{R}_2\text{SiOSiR}_2\text{-Y}$, and $-\text{RSi(OSiR}_3)_2$, where d is an integer from 1 to 50 and Z, G, and R are as described above.

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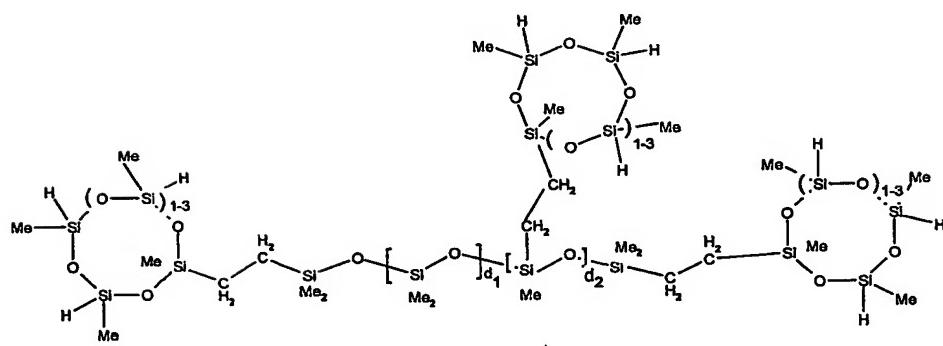
4. The method of any of claims 1 to 3 where the organohydrogensilicon compound is selected from the structures below where Me is methyl, $d^1 + d^2 = d$, and x can range from 1 to 100:



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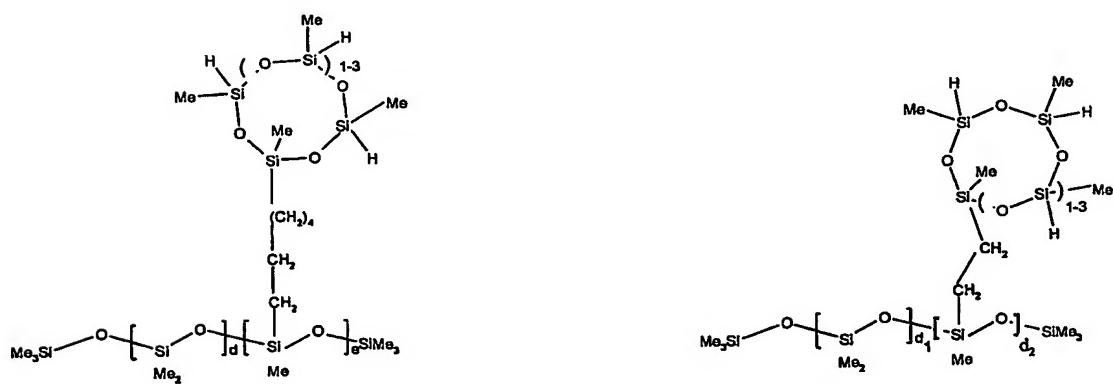


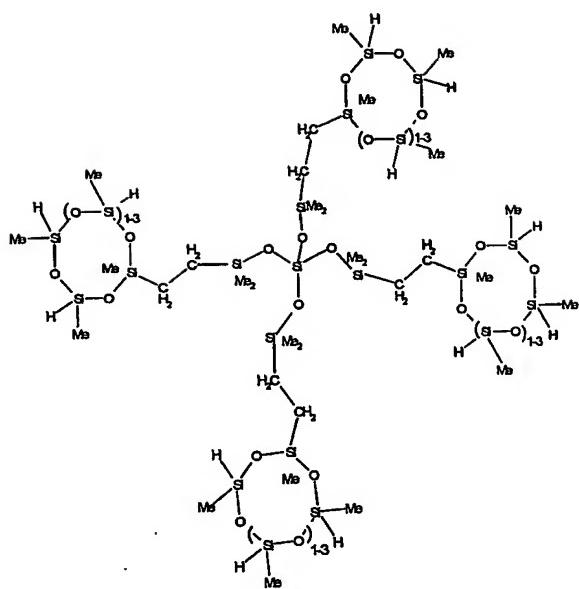
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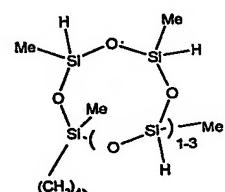
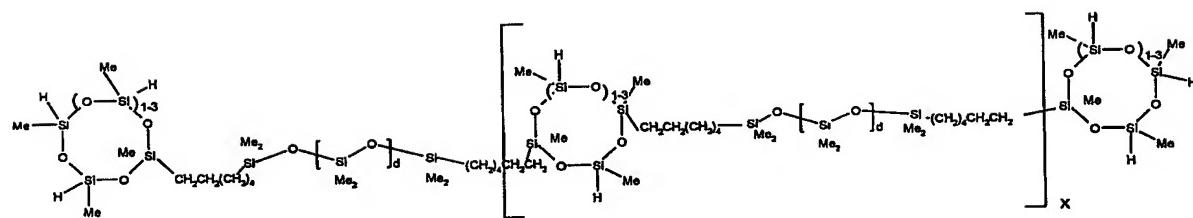
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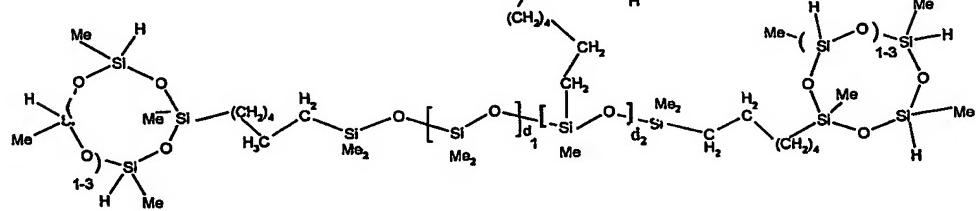


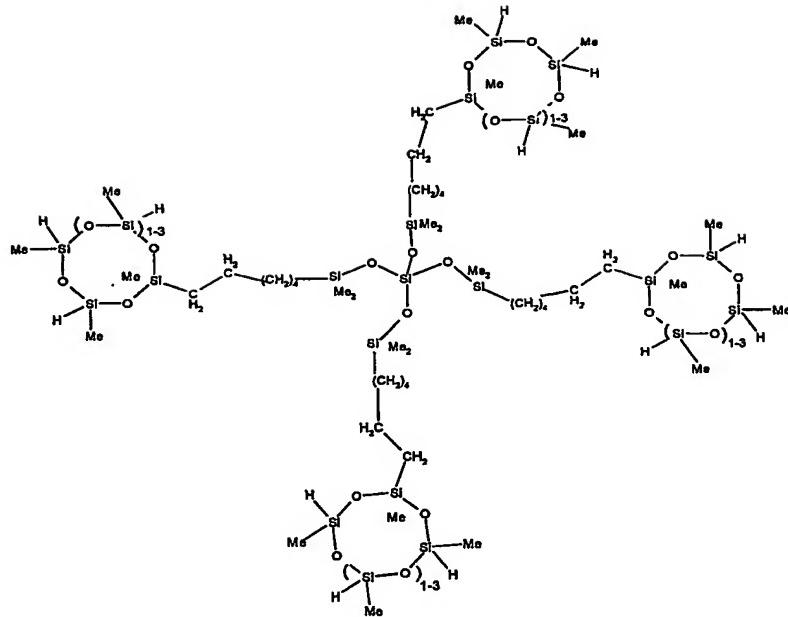


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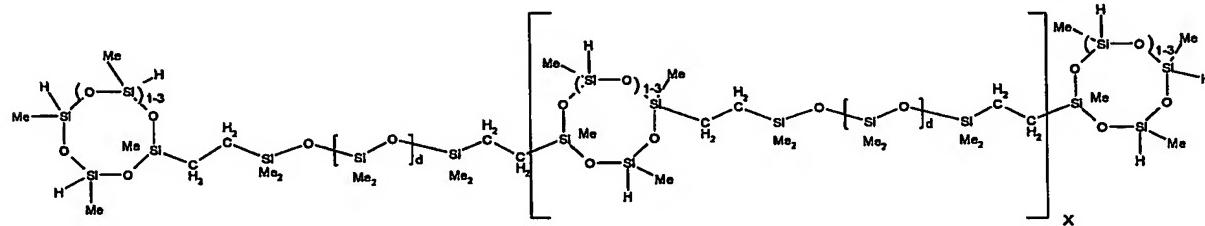


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5. The method of any of claims 1 to 4 where the organohydrogensilicon compound is
5 described by the structure below where Me is methyl, d is an average of 8, and x is an integer
from 1 to 15.



6. The method of any of claims 1 to 5 where R' is independently chosen from alkyl,
10 fluoroalkyl, or alkenyl, component (ii) is added in amounts from 3 to 1000 parts by weight
based on 100 parts by weight of component (i), and component (iii) is added in amounts from
0 to 1000 parts by weight.

- 15 7. The method of any of claims 1 to 6 where R' is independently chosen from alkyl,
fluoroalkyl, or alkenyl, component (ii) is added in amounts from 3 to 1000 parts by weight

based on 100 parts by weight of component (i), and component (iii) is added in amounts from 0 to 1000 parts by weight.

8. The method of any of claims 1 to 7 where component (i) is the reaction product obtained
5 by mixing in the presence of a platinum group metal-containing catalyst at least one organohydrogensilicon compound containing at least one silicon-bonded hydrogen atom per molecule and at least one compound having at least one aliphatic unsaturation.
9. The method of any of claims 1 to 7 further comprising (2) mixing in the presence of a
10 platinum group metal-containing catalyst, the silicon-bonded hydrogen containing branched polymers from step (1) with (iv) at least one material having at least one aliphatic unsaturation to form a branched polymer.
10. A silicon-bonded hydrogen containing branched polymer made by the method of any of
15 claims 1 to 8.
11. A branched polymer made by the method of claim 9.
12. A composition comprising the silicon-bonded hydrogen containing branched polymer of
20 claim 10.
13. A composition comprising the silicon-bonded hydrogen containing branched polymer of claim 10, a Si-alkenyl crosslinker, a platinum-group containing catalyst, and an inhibitor.